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ABSTRACT

In 1983, New Brunswick Community College-Moncton (NBCCM) was awarded funding to establish a Computer Aided Drafting/Manufacturing (CAD/CAM) resource center to train students and assist industry in researching and adopting CAD/CAM technology. However, inherent constraints in industry and the absorption of college resources by in-house training defeated the technology transfer purpose of the resource center. In 1988, NBCCM established the Customized On-Site Resource Training Services (CORTS) partnership program to provide customized, on-site training; consultation; assistance in database and prototype development; short-run production assistance; and financial assistance services at a minimum cost to small and medium-sized companies. CORTS enables the firms to invest in their human resources and also provides the "no risk-no cost" tools necessary for firms to evaluate the potential for integrating new technology in their operations. CORTS is run on a year-round basis and is completely self-supporting. Outcomes of the project include the following: (1) during its first full year of operation, more than 60 firms enrolled in the CORTS program, including 48 service firms that received CAD training/consultation and 15 manufacturers that received CAM assistance in prototype development and short-run production services; (2) a majority of the participating firms implemented CAD/CAM technology within their operations; (3) several firms amalgamated in order to share high-technology resources and bid on larger contracts; (4) additional staff were recruited by firms and NBCCM; (5) demand for the program in New Brunswick and other maritime provinces increased; and (6) NBCCM became the focal point for technology transfer and service to small regional businesses. Appendixes provide information on the status of CORTS programs and services, company testimonials, and additional documentation. (JMC)

ED308914

PROVINCE OF NEW BRUNSWICK

DEPARTMENT OF ADVANCED EDUCATION & TRAINING

CUSTOMIZED ON-SITE RESOURCE TRAINING SERVICES

A PARTNERSHIP PROGRAM

NEW BRUNSWICK COMMUNITY COLLEGE

MONCTON, NB

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— CORTS —

SYNOPSIS

1. NAME OF PROJECT: "CORTS" - **C**ustomized **O**n-Site **R**esource **T**raining **S**ervices.

2. NAME OF PARTNERS: New Brunswick Community College - Moncton
New Brunswick Firms
Employment & Immigration Canada (EIC)
University of New Brunswick - Fredericton

3. PROVINCE: New Brunswick
ECONOMIC SECTOR: Architects/Designers/Engineers/Manufacturers.
PROGRAM AREA: Computer Aided Drafting/Manufacturing (CAD/CAM)

4. ABSTRACT:

The New Brunswick Community College-Moncton was awarded Skill Growth funding from EIC in 1983 to establish a CAD/CAM resource center for training students as well as assisting industry to research and adopt the technology. Shortly thereafter a dichotomy was born: The College was unable to honor the industry obligation of the grant due to established educational format constraints; industry could not meaningfully access the resources available because of the inherent constraints under which they operated.

In January, 1988, the College initiated an innovative partnership program called "CORTS". The program enabled industry to invest in their human resources and also provided the "no risk-no cost" tools necessary for them to evaluate new technology. It also gave the College the operational flexibility to reach out into the real world and provide custom-made assistance on a one-to-one basis.

During the first full year of operation, in excess of sixty (60) Maritime firms enrolled in the "CORTS" program. Forty eight (48) service-related firms received customized on-site CAD training/consultation, while another fifteen (15) manufacturing-related firms received CAM assistance in prototype development/short-run production services on a feasibility study basis.

Results have been impressive. A majority of participating firms have implemented new technology into their operations; firms have amalgamated and are sharing hi-tech resources to bid on larger contracts; additional staff are being recruited by firms and the College due to increased opportunities; demands for the program in New Brunswick and other parts of the Maritimes have increased (in cooperation with the University of New Brunswick in Fredericton, the College is able to offer the program to capital city firms starting in January 1989, utilizing University resources); and the College has become the focal point for technology transfer and service to small business in this region of the province.

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DETAILS

1. INSTITUTIONAL PARTNER:

The Moncton College was originally established in 1946 as a retraining center for veterans. It is now in the fifth decade of service to the citizens of New Brunswick. The institution has grown to meet the ever-increasing demands for a wide spectrum of programs, both on-site and off-site. Modern up-to-date resources have enabled the College to deliver training to over 40% of the student capacity that makes up the Anglophone Colleges in the Province (5 out of 9 sites in the network). Today the school serves more than 1400 full-time students with a staff in excess of 200. More than 2200 students enroll annually in the College Night School.

A retired Deputy Minister once described the Moncton College as the "Flagship of the Fleet". His kind analogy was in reference to the leadership role the College has often provided in "pointing-the-way." Leading-edge partnership progams have been an integral part of the College's history -the "CORTS" program is one of many examples, while others include:
— apprenticeship programs with the Dept. of Labour.
— public school system transfer of credits in selected programs.
— employee programs with Co-op Atlantic, NB Power, NB Tel.
— Corrections Canada programs at Dorchester penitentiary.
— "visible minority" & "sight/mobility impaired" programs.
— national corporations' employee programs (Canadian Tire Corp., etc.)
— D.O.T.'s Atlantic maintenance engineer program.
— GM's Automotive Service Education Program for apprentices.
— GM's service product training for dealership staff.
— other automative manufacturer dealership programs.

General Motors of Canada liaison with the College is the most recent example of partnership training. The College, under the auspices of GM, delivers technician training which is current with new automotive developments.

The Moncton College is proud of its tradition and history. Much has been accomplished over the last 42 years. The College anticipates the promise of the future and the challenges it will face in assisting business and industry adapt to the continuous changes that are characteristic of the new information society.

2. COMMUNITY PARTNERS:

Moncton is located in the south-eastern region of the Province and has a population of 86,000, with one-third being of Francophone descent. It is less than an hour's drive from neighbouring Nova Scotia and Prince Edward Island, and is therefore appropriately called "The Hub of the Maritimes". The College provides the City with a great many economic spin-offs due to the size of its student base and the amount of outside

activities generated. The community frequently accesses the facilities for numerous formal and social functions.

The business partners are very small firms representing a cross-section of the service-sector based economy: engineers, architects, commercial artists, designers, small manufacturers, machine shops, fabricators, to name a few. Local companies are very much aware of the College's regular programs, having hired a large number of graduates. The "CORTS" program was a "breath of fresh air" to them, because it allowed existing staff to update their skills. They welcomed the opportunity to participate. A complete listing of the 63 partner-firms is included in Appendix "A".

3. THE DICHOTOMY:

The Moncton College established a high technology CAD/CAM Center in 1983 as a result of Skill Growth funding ($1.765 million) received from Employment and Immigration Canada (EIC).

The first three years of operation were devoted to training students in regular programs as well as those sponsored by EIC. During this period it became very apparent that access to the Center by local industry was not possible due to College resources being completely absorbed by in-house training. This was in partial contradiction to the intention of the grant - the transfer of technology to industry.

Like other regions of Canada, New Brunswick's business community is composed of small firms (1-10 employees), working hard to remain competitive. The Center's research into the constraints facing small and medium size firms indicated they did not have the resources to:

— research the technology.
— undertake a feasibility study.
— devote existing personnel for extended off-site training.
— select appropriate hardware and software.

It was also discovered that most employers had budgeted very little, if any, to invest in their company's human resources.

A way had to be found to free-up College resources that would in turn assist industry to overcome their inherent constraints. The Canadian Job Strategy Program - Skill Investment option was the vehicle required to get the program moving.

4. THE PROBLEM:

Firms participating in the "CORTS" program were aware that technology adoption was a necessity for long-term viability, through the many seminars and workshops conducted by the CAD/CAM Center. Due to their lack of human resource funding, coupled with a relatively restrained College resource base, many firms had to start at the bottom of the computer application curve.

Educational requirements for firms were classified into four categories: those who lacked the basic knowledge of computers in general; others who had limited exposure to computerized office automation; firms that had employees with CAD or CAM training (recent graduates) but were undecided about adopting; and those who adopted the technology but wanted to increase their resource productivity.

Training requirements varied depending on the firms' resources. Older established firms had employees who received their post-secondary education without any exposure to computers, while younger firms tended to be more computer-literate. The diversity of educational backgrounds necessitated a customized approach, not only for each firm, but for almost every employee. For this reason, it was necessary to train very small numbers of employees almost in a one-to-one tutorial format.

In consultation with many of the small firms (1 - 3 employees) prior to program start up, a decision was made to conduct most of the training on-site at the firms' locations. Delivery had to be such so as not to interfere with normal workloads and office routines; therefore, training was limited to 8 hours per week for a 12 week duration. Being computer-based training, stand-alone micro-hardware/software had to be acquired and dedicated entirely to industry. Due to the number of firms receiving on-site training in different locales, considerable instructor travel was involved. A flexible delivery schedule was incorporated into the program as firms were given the option to select training times that were convenient for them , e.g., days, evenings, or weekends.

5. THE RESPONSE:

The CAD/CAM Center at the Moncton College is a member of a provincial network known as the "Manufacturing Technology Center Inc." (MTC), comprised of 3 Colleges, 3 Universities and a Research Institute. It was formed in late 1982 and was the first of its kind to open in Canada in January 1983. The primary mandate of MTC Inc. is to assist NB industry in adopting new technology. The College, as one of the more active members, was continually striving to do more for industry but constraints hampered their efforts. A report authored by the Center manager entitled "Concerns for Survival", March 1987 outlined the ground work for the "CORTS" program. Over the five years of his term in this position at the College, he foretold of the deteriorating liason with industry unless a new and innovative direction was taken. With the cooperation and input of everyone involved, including administrators, staff, employers, and EIC, the program came into existence.

In July 1987, the College, under the direction of the Department of Advanced Education and Training, received approval to allow two Center staff members to be dedicated fulltime to the "CORTS" program.

The support services these instructors once provided to in-house students were assigned to other staff. The slower demand for on-site CAM training made it necessary for one instructor to return to the classroom part-time, where in addition to his normal teaching duties, he conducts "CORTS" related short-run production and prototype development projects with the assistance of students and graduates hired by the firms.

The program is run on a year-round basis, similar to the real-world schedule. There is no traditional summer break that is usually associated with educational institutions. The demand for CAD training/services far exceeded the most optimistic expectations. It was necessary to recruit additional staff, on a part-time basis, from firms who had already received training. Private sector trainers having access to their competitor's current projects posed a problem concerning confidentiality. The College recruits only people of high moral standards and confirms the instructor, to the firm, prior to training. If that firm has any reservation, a College instructor is assigned. We are not aware that any "leaks" have occurred. Besides assisting employers in retaining their employees in slow work periods and enriching their technology base, it enabled the College's regular staff to take their union-negotiated holidays.

The "CORTS" program represents a professional partnership between three players: The firm who desires training assistance; Employment and Immigration Canada (EIC), sponsor of the Canadian Job Strategy Program, and directed by the local Canada Employment Center (CEC) office; and the Moncton Community College which normally acts as a third party training facilitator with additional involvement via "CORTS".

Reimbursements to companies are based on the following:

— direct training costs paid at the maximum rate of $20.00 per training hour. (Most firms receive 50-60% or $10.00 - $12.00 per hour depending on their individual situation - new firms could receive $20.00 per hour).
— wages reimbursed at 60% of employee's salary up to a maximum of $7.50 per training hour.
— equipment required for training is reimbursed up to a maximum of $5000.00 per agreement.

The "CORTS" program is completely self-supporting. The contracts generated with individual firms are based solely on the College's cost to provide the training/services. The result of charging only the necessary costs to firms has meant that the local CEC office's budget is not over-burdened, employers need to invest minimum amounts, and "word-of-mouth" promotion by participating firms, assists in marketing the program.

Four blocks of training are pre-scheduled throughout the year: January-March/April-June/July-September/October-December. With this schedule firms are able to match their workloads with the commencement of employee training. The firm's staff are identified by the owner in order of training priority. This enables employers to coordinate the employee's training responsibilities with the company's schedule of activity.

6. THE CURRICULUM:

The main objective of the "CORTS" program is to establish long term, one-to-one relationships between the College and local firms in order to identify their individual needs and explore the potential for integrating new technology into the company's operation. An effective way to determine business needs and modes of operation is to move the instructional staff out of the classroom and into the real world (moving the mountain to Mohammed!).

Activities are mostly centered at the firm's location where College staff become climatized to the "new environment" in order to appreciate first-hand, the operation and get to know the individual traits of the owner/employees. It is here that the meaningful relationship develops and grows. The empathy the instructor acquires for the trainee is much more intense that in a normal classroom situation because he/she is now directly exposed to actual working conditions, face-to-face with the employee.

The uniqueness in training methodology is to use the firm's current projects and apply them directly to the learning. In the case of CAD training, employees are usually able to input their projects on the computer system during the 3rd or 4th week, depending on prior knowledge. Comprehensive individualized courseware documentation is supplied that enables trainees to continue by themselves in the absence of an instructor. The amount of additional exposure depends on the owner's allocation of time for the employee(s).

Training is conducted in blocks of 13 weeks, although the actual duration is only 11 weeks. The additional 2 weeks allow for make-up time due to employee sickness, holidays, or work schedule. The training course is 100 hours in duration. Initially, 20 hours are taken at the College during the first week. It is not a consecutive 20 hours but spread out through the week thus avoiding "saturated learning" doldrums and long periods away from the office. During this initial training, employees are given intensive exposure to only the need-to-know material. The balance of training (80 hours), is undertaken at the firm's location. Instructional staff visit the trainees two half-days a week (8 hours in total) for a ten week period. Training may also be scheduled during the evenings and involves two-4 hour sessions per week. Weekend training is available if firms find this time more convenient. The "CORTS" program stresses the importance of **flexible training delivery.**

At the beginning of the program, firms were under the impression that the EIC funding would help subsidize their equipment purchase, but this was not the case. The College, with agreement of the local Canada Employment Center, rented ten (10) workstations complete with software and wrote them off against the training on a pro-rated basis over a twelve month period. This entrepreneurial move put additional pressure on the Center manager to ensure sufficient firms were recruited to pay for these units. The units were paid off in a nine month period and equipment rental charges are no longer included as training costs, effective January 1, 1989. The Center contributed two of its own workstations to the program to bring the total capacity to 12 units.

A complete state-of-the-art workstation is not only supplied to the firm but also maintained by the Center. It is available to the company for the full duration of the training period (12 weeks). The firm is required to sign an "Equipment Usage Agreement" which, among other things, obligates them to provide a reasonably conducive environment on their premises to conduct the training service.

The 12 workstations the Center uses in the program are allocated on a first-come, first-served basis for any particular block of training. The practice, for firms with more than one employee, is to train two people at a time on one workstation. This "buddy system" increases the efficiency of learning and reduces employee anxiety. The ratio of two employees per workstation is still maintained in the event larger firms may wish to train more employees in a one block span; that is, four employees would receive two workstations. In the case of CAD training, plotting services are provided by the Center and made available to trained firms during workdays, evenings or weekends. Plotting media and pens are also supplied at no extra cost. CAM training presented a logistical problem due to the lack of mobility of numerical control (NC) machines. If the firm, receiving on-site training, had not yet purchased a machine, the design programs generated for parts production were brought to the Center and machining carried out on the College's industrial-size units. If they had on-site NC machines, the programs were run in non-production time periods.

7. OTHER SERVICES:

Besides providing customized training to industry, a host of other services are included in the "CORTS" program which are of great benefit and supplied at minimum cost to participating firms:

Consultation: The combined expertise and resources of College staff are made available to local firms requesting "third party" opinions on a variety of different topics. This allows owners to make decisions based on unbiased points of view. The importance of utilizing the firm's current projects during the training cannot be over-emphasized. Demonstrations of system suitability during the training, with tangible proof that it works

for them, greatly elevates their confidence level. Consultation could involve hardware and software acquisition by the firm, trouble shooting, research information on specific software applications, implementation of the new technology, and/or establishment of procedures.

Data Base Development - This service mostly involves the creation or expansion of CAD application software used with the computer. Items covered under this service are provided on the basis that they do not conflict with private sector interest and are feasibility studies only.

Prototype Development - This service involves the making of a one-time model produced to strict specifications and standards. The same non-conflict principle applies for this service, which is intended to demonstrate the feasibility of implementing computer-aided manufacturing into a company's operation.

Short Run Production - Again this service is for feasibility purposes only and involves very limited production of CAD or CAM components which are mainly used for productivity comparison purposes.

Financial Assistance Planning - A major concern of many businesses today is the retraining and upgrading of their employees and hi-technology system acquisition. The existing resources available to meet the needs and requirements of the business sector are fragmented and sometimes unknown to firms wishing to remain competitive in the service and manufacturing world of the 1990's. CAD/CAM technology is not for everyone or may not provide a suitable return-on-investment to the firm considering adoption. Up front answers have to be forthcoming! The bottom line to this dilemma is "How much will it cost?" and "Is there any financial assistance available?" The Center manager stays in touch with federal funding agencies, provincial government departments and reliable private-sector vendors. These resources are made known to company owners who, in some cases, are completely unaware of what programs are in place to help them. The manager also provides an arm's-length follow-up service to ensure that projects are not overly delayed.

8. APPLICATIONS:

The flexibility of customized delivery, as devised in the "CORTS" program, lends itself very well for stand-alone computer-based training. Business sectors employing computers for office automation would have direct application. The short training duration per week (8 hours in this case) is very acceptable to owners as it does not disrupt normal business. Employees, supplemented with the necessary on-site tools, find the training enjoyable as it allows them more hands-on-practice and a longer time to absorb what they are learning.

The Center has primarily concentrated on hi-tech applications in engineering and manufacturing. Plans are underway to extend and expand the offerings it now provides.

The following are earmarked for start up in 1989-90:
— Advanced CAD applications-programming and customization.
— Advanced CAM applications-computer integrated manufacturing.
— Quality assurance/quality control in manufacturing.
— NC machine maintenance and servicing.
— Robot maintenance and servicing.
— Desktop publishing integrated with CAD.
— Computerized estimating for the construction industry.
— Survey software integrated with CAD.

In some training formats, it is planned to use the resources now possessed by industry (machines, in-house programs), to deliver the service. This cooperation by industry, to share with the College and other firms, exemplifies the true meaning of partnership.

9. EFFECTIVENESS:

The success of a program depends, for the most part, on its quality, the motivation of the people involved, and the creativity employed for delivery. From an industry perspective there must also be an element of **credibility.** The staff must have knowledge of what businesses are doing and be able to relate the training directly. The recruitment of part-time staff from industry, to provide training services, greatly enhanced the "CORTS" program. Without this cooperation, it certainly would have taken longer to secure industry's confidence.

Regular staff employed in the progam have benefited greatly. Instead of the job being another training situation, it now becomes a professional development experience. The visits to a variety of businesses exposes them to new trends in industry without the normal cost associated with P.D. activities.

The spirit of the program brings a new dimension to the New Brunswick Community College's out-reach into the community. Besides the regular training plan that provides for in-house training services. the program has expanded the College's horizons to assist industry in meeting the challenges of the 1990's. Most importantly, the College, via the "CORTS" program, has assisted industry in New Brunswick to:
— maximize the potential of firms wishing to implement high technology applications.
— minimize costs and risks.
— preserve jobs through adoption of the technology.

The adoption of CAD/CAM technology, by many provincial firms, has increased the opportunities for our graduates to stay and work in their own Province. Students who have secured this training in colleges and universities now have less problems finding plants where they can use their skills.

10. THE OUTLOOK:

Webster defines "opportunity" as "a favourable juncture of circumstances". At no time in the history of Atlantic Canada has this

definition been more appropriate for Community Colleges. The free-trade agreement will certainly impact on the College environment with a greater than ever demand for retraining Canadians to adjust to new job markets. Federally assisted programs, such as the Canadian Job Strategy, should no doubt expand assistance to employers who will be called upon to invest greater sums towards human resource development. The Colleges **must** play a pivotal role by developing effective marketing strategies, and becoming better training-brokers for industry.

Expansions are being made to the program, as witnessed with the start up of the Fredericton operation in January, 1989. The need to provide quality instruction and establish program continuity has prompted the Center to send its chief CAD instructor to handle the first block of training. In order to do more with limited resources, we have opted to do all training on site at the University of New Brunswick which will supply all support facilities. The plan is to train two firms at a time on four extra computers while maintaining the "CORTS" equipment usage format for individual firms. This approach allows us to double our throughput from the normal of 3-4 firms per instructor to 6. Evenings have been reserved by the instructor to assist firms, at their location, with any problems they may be experiencing. Another advantage of this lab-style delivery is in providing a more conducive learning environment for employees - away from all office interruptions. After the initial block is completed, UNB will provide the service and revert back to the regular training schedule.

The partnerships created, as a result of the "CORTS" program, have beneficial effects for all those involved: industry now has freer access to extensive College resources; tax dollars are well spent to help industry utilize the Canadian Job Strategy Program; the College has increased its resource inventory base; graduates are getting hi-tech jobs within the Province; and the community is receiving the economic spin-offs. We believe the "CORTS" program serves as a model for other sites in the Canadian College network to expand their efforts towards more community involvement and industrial partnerships.

"CORTS" PROGRAM TRAINING AND SERVICE STATUS

APPENDIX A

APPENDIX "A"
— CORTS —

NEW BRUNSWICK COMMUNITY COLLEGE
CAD/CAM CENTER — MONCTON

"CORTS" PROGRAM TRAINING STATUS

NO	START/FINISH DATE	FIRM NAME	NUMBER TRAINED	*TRAINED TO DATE
1	Jan 12/Jun 24/88	E.A. Hachey & Associates	4	4
2	Jan 12/Mar 31/88	J.M. Maclean Management	2	6
3	Jan 12/Mar 31/88	P. Thompson & Associates	2	8
4	Jan 12/Jun 24/88	Valron Engineering	3	11
5	Jan 12/Mar 31/88	D.A. Nelson & Associates	2	13
6	Apr 5/Jun 24/88	G. Henrichs Drafting	1	14
7	Apr 5/Jun 24/88	E. Reid Drafting	1	15
8	Apr 5/Dec 30/88	Crandall & Associates	10	25
9	Apr 5/Jun 24/88	D.A. Potter Consultants	2	27
10	Apr 5/Jun 24/88	Design Concepts	1	28
11	Apr 5/Sept 30/88	Parson Design & Management	4	32
12	Apr 5/Sept 30/88	SMA Engineering	4	36
13	Apr 5/Dec 30/88	J.L. Belliveau Consultant	6	42
14	Apr 5/Dec 30/88	Eastcan Consultants	6	48
15	Jun 27/Sept 30/88	C. Daigle Drafting	1	49
16	Jun 27/Sept 30/88	Young Design	1	50
17	Jun 27/Dec 30/88	Apex Machine Works Ltd.	4	54
18	Jun 27/Sept 30/88	Institutional Consultants	1	55
19	Jun 27/Sept 30/88	Design Studio	2	57
20	Jun 27/Sept 30/88	M. Dunn & Associates	1	58
21	Jun 27/Sept 30/88	E. Koch & Associates	1	59
22	Jan 3/Mar 31/89	Westmorland Surveys	2	61
23	Oct 3/Dec 30/88	Barley Sprinkler Sales	2	63
24	Oct 3/Dec 30/88	Cantrak Consultants	1	64
25	Oct 3/88 Jun 30/89	Enerplan Consultants	6	70
26	Oct 3/88 Mar 31/89	Peerless Consultants	4	74
27	Oct 3/ Dec 30/88	Henderson Surveys	2	76
28	Oct 3/Dec 30/88	W.N. Brooks & Associates	1	77
29	Oct 3/Dec 30/88	W.M. McGrath Architects	1	78
30	Jan 3/Dec 22/89	McDonnell Douglas Comp. Sys.	1	79
31	Jan 3/Mar 31/89	R.J. Pickett & Associates	2	81
32	Jan 3/Mar 31/89	Sherran Surveys	1	82
33	Jan 3/Jun 30/89	Newco Construction	3	85
34	Jan 3/Jun 30/89	Van Den Burg Industries	1	86
35	Jan 3/Mar 31/89	Design Draftshop	1	87
36	Jan 3/Mar 31/89	CN Real Estate	1	88
37	Jan 3/Dec 29/89	Design Workshop (NB) Ltd.	8	96
38	Jan 3/Jun 30/89	Gosbee Products (Amherst)	4	100

* Accumulated Total

"CORTS" PROGRAM TRAINING STATUS

NO	START/FINISH DATE	FIRM NAME	NUMBER TRAINED	*TRAINED TO DATE
39	Jan 3/Mar 31/89	Eastern Mine Services Ltd.	2	102
40	Apr 3/Jun 30/89	Hansa Sealand Limited	2	104
41	Jan 3/Jun 30/89	Basic Design Assoc. (Sussex)	4	108
42	Jan 3/Mar 31/89	Spear MacDonald Assoc. Ltd.	2	110
43	Jan 3/Jun 30/89	Fiander-Good Assoc. (F'ton)	4	114
44	Jan 3/Mar 31/89	Ted. C. Clarke Ltd. (F'ton)	1	115
45	Jan 3/Mar 31/89	Eastern Designers (F'ton)	2	117
46	Jan 3/Mar 31/89	Hitchman Surveys (F'ton)	2	119
47	Jan 3/Mar 31/89	D.M. Steeves Ltd. (F'ton)	2	121
48	Jan 3/Mar 31/89	Trainor Surveys Ltd. (F'ton)	2	123

* Accumulated Total

"CORTS" PROGRAM SERVICE STATUS

NO	FIRM NAME/LOCATION	SERVICE SUPPLIED
1.	G.N. Plastics Ltd. Chester, N.S.	Prototype/short run production
2.	Gosbee Products Amherst, N.S.	Prototype/short run production
3.	Maritime Hydraulics Fox Creek, N.B.	Short run productions
4.	Ocean Optical Ltd. Moncton, N.B.	Prototype development
5.	MFM Industries Ltd. Moncton, N.B.	Short run productions
6.	Apex Machines Ltd. Moncton, N.B.	Short run productions
7.	ADV-Medical Technology Charlottetown, P.E.I.	CAM Program debugging
8.	Westmorland Labs Sackville, N.B.	Prototype/short run productions
9.	E.S. Stephenson Company Saint John, N.B.	NC part estimate
10.	Hydrostatic Services Moncton, N.B.	Short run productions
11.	Abcon Industrial Supply Ltd. Moncton, N.B.	Short run productions
12.	Waldale Industries Ltd. Amherst, N.S.	CAM program generation

"CORTS" PROGRAM SERVICE STATUS

NO	FIRM NAME/LOCATION	SERVICE SUPPLIED
13.	CN Rail Moncton, N.B.	Short run production
14.	Dept. of Municipal Affairs Fredericton, N.B.	CAD production
15.	Dept. of Labour Fredericton, N.B.	CAD production

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"CORTS" PROGRAM - COMPANY TESTIMONIALS

APPENDIX B

J. L. BELLIVEAU & ASSOCIATES LTD.
consulting engineers

14 December, 1988

NBCC
1234 MOUNTAIN ROAD
MONCTON, N.B.
E1C 2T4

ATTN: JOHN HANNUSACK

RE : CAD COURSE

Dear Sir:

We would like to take this opportunity to let you know that we are drawing near the end of our cad training course and have found it to be most interesting. Having the computer and associated peripheral devices available to us at the office enabled us to use it at our convenience and pleasure.

Most of us in the office have now taken this course and all agree that it is both interesting and worthwhile and that CAD is a must in the Consulting Design Engineering.

This type of system is essential to the future of our office and are looking into the matter at this time.

Yours truly,

J. L. BELLIVEAU & ASSOCIATES LTD.

Margot Edmasson

J. L. Belliveau, P. Eng.

JLB/sj

320 MOUNTAIN ROAD · MONCTON, N.B. E1C 2M3 · TELEPHONE 857-2066 FAX: 858-5574

CANTRAC
CONSULTANTS LTD.
CONSULTING ENGINEERS

December 12, 1988

New Brunswick Community College
Dept. of Advanced Education and Training
P.O. Box 2100, Station "A"
Moncton, N.B.
E1C 8H9

ATT: John Hanusiak
Cad / Cam Manager

Dear Mr. Hanusiak:

As you are aware, recent advances in electronic / information technology which have made equipment more compact, more powerful and more economical have found ready application in engineering design so much so that the time of the computerized workstation has arrived. This coupled with the emphasis on CAD training at the technical school level i.e. with graduates being prepared for CAD more so than conventional mechanized drafting has hastened the advent of CAD in our industry.

The CORTS program is therefore both timely and relevant. To date two of our staff including myself have completed the course in Basic CADKEY and one is currently receiving instruction. We have found the capability and cooperation of the instructors to be very satisfactory and the feature of the program whereby the hardware is taken to the workplace after a basic instruction period greatly enhances the practical nature of the program. The flexible scheduling of the instruction at the workplace facilitates integration into the work schedule.

As a small and relatively new consulting engineering firm which has had full participation in the course, we can attest to the affordability and practicality of the program to virtually any member firm of our industry.

In closing we feel that the Dept. of Advanced Education and Training - Moncton Campus of N.B.C.C. and in particular the CAD / CAM section under your direction are doing a commendable job of delivering the program.

Sincerely,

D.A. Potter, P.Eng.

735 Hillsborough Rd., Riverview, N. B. (506) 387-7576 FAX (506) 387-8100

CRANDALL ENGINEERING LTD.

1077, Boul. St. George Blvd., Moncton, N.B., Canada E1E 4C9
TELEPHONE (506) 857-2777 FAX (506) 857-2753

Our File 18-8
1988-12-09

New Brunswick Community College
Department of Advanced Education & Training
P.O. Box 2100, Station A
Moncton, New Brunswick
E1C 8H9

Attention: Mr. John Hanusiak
CAD/CAM Manager

Re: CORTS Training Program

Dear Sir:

I would like to thank the College for the training given to our staff under the CORTS program.

The training obtained by the ten (10) members of our staff will enable us to proceed with the introduction of CAD to our firm. We are now preparing to purchase two (2) drafting stations.

Special thanks to you and your staff for the training and assistance provided.

Sincerely yours,

R.D. Richard, P.Eng.

:lb

DISCIPLINES:
Civil
Electrical
Environmental
Feasibility Studies
Industrial
Investigations
Marine
Materials Handling
Mechanical
Municipal
Project Management
Recreation
Structural
Transportation
Water Resources

MICHAEL J. DUNN & ASSOCIATES LTD. (506) 857-3988

P.O. / C.P. 2005, STA. / SUCC. "A" MONCTON, NB E1C 8H7

December 13, 1988

John Hanusiak
CAD/CAM Manager
New Brunswick Community College
P.O. Box 2100, Station "A"
Moncton, N.B. E1C 8H9

Dear Mr. Hanusiak:

Further to our recent telephone conversation, I would like to offer comment regarding the CADD course I took this past summer via your CORTS program.

Aside from the course content itself, which was very good, the On-Site, application intensive approach was excellent from my point of view. Within seven hours of the end of the college based first week of instruction, I was actually doing work with the Cadd package on the hardware supplied. I wrote new business as a result of the new skills, and actually billed clients for work done during the course. I don't know if this hands-on, real world approach is unique to your program, but I give the NBCC kudos for it. I believe you have found a viable answer to bringing your college to the small business person - on his terms, in his playing field.

Once again, thank you for your help, and please keep me informed if you should take the same route with other courses in the future.

Truly yours,
Michael J. Dunn & Associates Ltd.

Michael J. Dunn

/djd

eastcan

RECEIVED
DEC 14 1988
CAD/CAM
MONCTON

December 12, 1988

New Brunswick Community College
1234 Mountain Road
P. O. Box 2100, Station 'A'
Moncton, N. B.
E1C 8H9

Attention: Mr. John Hanusiak
Corts Program Manager

Dear John:

I would like to express our appreciation to you and your staff for giving our company the opportunity to take part in the "CORTS" training program.

With the instructional format used, our staff have been able to receive training on Micro-Computer hardware, DOS and Cad software, while using it for on-going projects within the office. The information given in the course will prove very useful for the implementation of our own Cad system in the New Year.

Yours truly,

EASTCAN CONSULTANTS LTD.

Michael Gillis

Michael Gillis, P. Eng.

MG/lek

EASTCAN CONSULTANTS LTD.
Consulting Professional Engineers
175 Henri Dunant St. (506) 857-8880
Moncton, N.B. E1E 1E4 FAX 859-8393

enerplan consultants ltd.
energy planning and engineering

December 13, 1988

Cad/Cam Center Manager
N.B. Community College
P.O. Box 2100
Station "A"
Moncton, N. B.
E1C 8H9

Attn: Mr. John Hanusiak

RE: Training Program

Dear Sir:

We would like to express our appreciation to you and your staff for providing us with a high-caliber training program. Your instructors were both knowledgeable and professional in their duties and the course content was very well prepared and presented.

We would not hesitate to recommend your training program to other clients and once again, thank you for the excellent service.

Sincerely,

Kirk A. Bavis, P. Eng.
President

/fj

86 Botsford Street, Moncton, N.B. E1C 4X3 • (506) 854-5536 858-1300
FAX (506) 858-1906

ERNEST A. HACHEY & ASSOCIATES LTD.

80 Driscoll Crescent
Moncton, N.B. E1E 3R8
(506) 853-0018

Consulting Professional Engineers

December 8, 1988

Mr. John Hannusack
The New Brunswick Community College
1234 Mountain Road
Moncton, NB
E1C 2T4

Dear Mr. Hannusack:

I would like to take this opportunity to thank you for allowing our firm to participate in the "CORTS" program.

The theory and practical work received by your instructor, in our office, was a great advancement in computer technology.

Yours truly,

Ernest A. Hachey, P. Eng.

EAH/sah

MARITIME HYDRAULIC REPAIR CENTRE

P.O. BOX 102, FOX CREEK, N.B. E0A 1R0
TELEPHONE (506) 858-0600 TELEX 014-2862

December 15, 1988

New Brunswick Community College
P. O. Box 2100, Stn. "A"
Moncton, N. B.
E1C 8H9

Attn: John Hanusiak, Cad/Cam Manager

Re: C.O.R.T.S. Program

Dear John:

At this time I would like to thank the New Brunswick Community College for their assistance through the C.O.R.T.S. Program in helping us analyze the feasability of purchasing computer aided manufacturing equipment at our facility in Fox Creek, New Brunswick.

After manufacturing a cross section of our standard production items in small volumes on your CNC Turning & Milling Centres, we completed a feasability study comparing these items produced on conventional lathes and milling machines versus computer controlled Turning and Milling Centres. The results were impressive indeed; initial indications are that we can save 60 to 85% in machining time, compared to conventional machining methods, while vastly improving surface finish, dimensional tolerance, and repeatability.

In the final analysis, we decided to proceed with the acquisition of a CNC Lathe and CNC Milling Centre, which will be installed and operating at our facility here in Fox Creek early in the new year. Again, I would like to thank the New Brunswick Community College and the C.O.R.T.S. Program for their technical assistance, and look forward to working with them again in the future, on similar programs. I would highly recommend your services to anyone looking for technical assistance in a manufacturing environment.

John, if I can be of any assistance to you in the future, please do not hesitate to call.

Yours truly,

Kim Carruthers, C.E.T.
General Manager

KC/ps

AUTHORIZED SUNDSTRAND HYDRO - TRANSMISSION
SERVICE CENTRE AND DISTRIBUTOR

William McGrath
Architect
Ltd.

885 Main Street
Moncton, New Brunswick, E1C 1G5

William McGrath, President

16 December 1988

Mr. John Hanusiak
CAD/CAM Manager
New Brunswick Community College
P.O. Box 2100
Moncton, New Brunswick
E1C 8H9

Dear Mr. Hanusiak:

On behalf of Beverly Barrett and Wallace Brooks, I would like to thank your staff for all the help they gave us during our training period.

Their knowledgeable guidance and instructions have been most beneficial to this firm and hopefully in the new year we will be in the position of purchasing a computer drafting package.

Respectfully yours,

William McGrath

December 13, 1988

New Brunswick Community College
Moncton Campus
P.O. Box 2100, Station A
MONCTON, NB
E1C 8H9

ATTN: MR. JOHN HANUSIAK, CAD-CAM Dept.

Dear Sir:

We would like to take this opportunity in thanking the Community College for past help in areas of expertise that we do not have in our manufacturing operation.

In particular, the most recent occasion where-in the college helped us to define areas of metal fatigue on our mobile crane.

We, in the industry, are appreciative of this type of co-operation between the academic and the business community and sincerely hope that it continues in the future.

We see the technical college as a valuable tool for small and medium size industry seeking advice and expertise.

Yours sincerely,

George M. Grant
Plant Manager

GMG/lew

1947 40 1987

MFM INDUSTRIES LIMITED 175 BEAVERBROOK STREET MONCTON, N.B.
MAILING ADDRESS: P.O. BOX 2159 STN. A E1C 8J2

D. A. NELSON & ASSOCIATES LTD.
Consulting Professional Engineers
Lower Coverdale, R.R. #3, Moncton, N.B. E1C 8J7 (506)386-1144

December 8, 1988

New Brunswick Community College
1234 Mountain Road
Moncton, N. B.

Attention: Mr. John Hanusiak

Re: CORTS Program

Dear John;

I am writing in reply to your inquiry of today regarding our participation in the CORTS program as offered by your department.

As you are aware, two of our employees underwent training through this program to learn the CADKEY design system. To that time, neither of them had any experience in computers let alone CAD drafting. After the program was completed, I feel they both had a good understanding of the operation of a computer system and the CADKEY drafting system. Considerable time was spent following the instruction period in mastering the package and implementing it successfully in our field of engineering.

At this time we are using the CADKEY design package to produce all of our engineering drawings and the end product seems to be very good.

I believe the instruction provided by your staff was excellent and should only get better with time.

Yours truly,

D. A. Nelson & Associates Ltd.

David A. Nelson, P. Eng.

OCEAN OPTICAL

December 16, 1988

CAD/CAM Manufacturing
Technology Centre
N.B. Community College
P.O. Box 2100 Stn A
Moncton, N.B.
E1C 8H9

Att: Mr. John Hanusiak

Dear Mr. Hanusiak:

We wish to thank the personnel at the M.T.C. CAD/CAM Centre of the Moncton Community College for their help, support and direction in our evaluation of the applicability of different CNC and manual machining processes for production of components destined to be used in our FINGERS frame measuring instrument and other related equipment. Much was learned in our experience with the CAD/CAM centre ,and thus the need for such centers, when well directed, can be of enormous value to the uninitiated such as ourselves.

Best Regards
OCEAN OPTICAL LTD.

Marc Y. Savoie, P. Eng.

OCEAN OPTICAL LTD., P.O. BOX 1150, 5 ORANGE LANE, MONCTON, NEW BRUNSWICK, E1C 8P6 • (506) 857-0220

Eldon Reid
Drafting Services
21 Tweedsmuir Dr.
Moncton, N. B.
E1E 1R7

12.09.88

New Brunswick Connunity College
P.O. Box 2100, Station A
Moncton, N. B.
E1C 8H9

Attention:John Hanusiak

Dear Sir:

First of all I would like to thank you and your staff for the help given prior to my enrollment into the "CORTS" Program. This help enabled me to evaluate the program to see if it would be useful to myself.

Also, I appreciated the help that all the instructors gave during the program, over and above the instruction period. This made it possible for me to acquire a CAD system that suited my own needs.

I would like to say that without such a program, I still would not be using the advances technology has made in my profession. Because of taking the program, I have also been able to expand my Clientel by going into a market that otherwise I would have passed by.

I would like to stress the point that the Eighty Hours of personal instruction in my own office is probably the only way I would have been able to take the time to learn the system.

Once again, My Thanks,

Yours truly,

G. E. Reid

SMA Engineering Ltd.
Consulting Engineers

December 15, 1988

Mr. John Hanusiak, P. Eng.
CAD/CAM Centre
New Brunswick Community College
P.O. Box 2100, Station "A"
Moncton, N. B. E1C 8H9

RE: CORTS PROPOSAL - CADD TRAINING

Dear Mr. Hanusiak:

Having just completed the third "Training Sales Agreement" for two more members of our staff to receive CADD training, I am prompted to express the firm's appreciation to you and your staff for the excellent programme being offered to us.

The convenience of having the training take place in our drafting office, with the option of using examples directly related to our fields of specialisation, have all helped to encourage the trainees to participate enthusiastically. Your patient and competent instructor, Chris Stratton, has been a great asset throughout.

The financial assistance provided by C.E.I.C. has been a good incentive from a business aspect. It's up to us now to pursue the further development of our technical training programme to enhance our competitiveness and profitability.

Thank you for offering the opportunity to our firm. We look forward to receiving CADD training in the near future for other members of our staff.

Yours very truly,

SMA ENGINEERING LTD.

Peter Sawyer

PS/ar

Valron ENGINEERS INGENIEURS inc.
80 DRISCOLL CRESCENT, MONCTON, N.B. E1E 3R8
TEL. (506) 853-0018 FAX (506) 857-9974

December 8, 1988

Mr. John Hannusack
The New Brunswick Community College
1234 Mountain Road
Moncton, NB
E1C 2T4

Dear Mr. Hannusack:

I wish to thank you for giving our firm the opportunity to advance in computer technology by offering the computer course under the "CORTS" program.

The hours of theory combined with the practical work with you instructor, in our office, have benefited our firm greatly.

Yours truly,

Valmont Landry, P. Eng.

VL/sah

ACCC PARTNERSHIP AWARD SUBMISSION

APPENDIX C

"CORTS" PROGRAM - ADDITIONAL DOCUMENTATION

Appendix C has been removed due to copyright restrictions. It contained an article from the Moncton, New Brunswick Times-Transcript for April 9, 1988, entitled, "Program is Model for Others, Says King."

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